EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Carl A. Forest on October 26, 2009.

The application has been amended as follows:

IN THE CLAIMS

1. (Currently Amended) A substrate processing chamber comprising: a substrate supporting member located within a pressure sealed vessel; and a perimeter partition valve (PPV) dispersed within said vessel, said PPV comprising: an essentially continuous perimeter sealing slide; an essentially continuous perimeter seal within said slide; an essentially continuous perimeter sealing surface; and an actuator for moving said sealing slide between an open position and a closed position; said processing chamber characterized by: a perimeter gas distribution plenum; a perimeter gas flow drift channel in, serial fluidic communication downstream from said gas distribution plenum; and an inert gas supply port in serial fluidic communication upstream from said gas distribution plenum; an inert gas shutoff valve in serial fluidic communication upstream from said inert gas supply port; said perimeter gas flow drift channel comprising an outer end and an inner end; said outer end is substantially proximate to said perimeter seal; wherein said PPV confines a pressure sealed portion within said vessel when said perimeter sealing slide is actuated to said closed position; said pressure sealed is formed between said slide and said

sealing surface using said seal; said pressure sealed portion comprising said substrate support member; and said PPV forms a perimeter access channel to said substrate support member when said PPV is actuated to said open position; wherein said gas distribution plenum communicates a substantially unified flow of inert gas from said inert gas supply port to said outer end of said drift channel when said shutoff valve is open; and said drift channel further communicates said inert gas into said pressure sealed portion of said vessel when said shutoff valve is open.

2. (Original) The substrate processing chamber as in claim 1 further comprising: a continuous sliding perimeter protection member; Said sliding perimeter protection is attached to the inner side of said perimeter sealing slide; said sliding perimeter protection member forms said perimeter gas flow drift channel when said PPV is actuated to said closed position; and said perimeter protection member substantially covers the inner portion of said perimeter sealing slide.

3. (Original) The substrate processing chamber as in claim 2 further comprising: a stationary perimeter protection member; and a substantially restricted perimeter gas distribution plenum is formed between said sliding perimeter protection member and said stationary perimeter protection member when said PPV is actuated to said closed position.

4. (Original) The substrate processing chamber as in claim 2 wherein said sliding perimeter protection member defines a portion of the inner wall of said process chamber; and said sliding perimeter protection member forms a perimeter flow path with a substantially round top corner.

5. (Original) The substrate processing chamber as in claim 4 wherein said stationary perimeter protection member defines a portion of the inner wall of said process chamber; and said stationary perimeter protection member forms a perimeter flow path with a substantially round bottom corner.

6. (Previously Amended) The substrate processing chamber as in claim 1 further comprising: an outer perimeter seal; a vessel perimeter sealing surface; a lid; a lid perimeter sealing surface; said outer perimeter seal is dispersed within said slide; said outer perimeter seal forms a pressure tight communication with said vessel perimeter sealing surface when said PPV is actuated to said closed position; and said perimeter seal forms a pressure tight communication with said lid perimeter sealing surface when said PPV is actuated to said closed position[.] [W]wherein said lid is removable providing access to said chamber and said perimeter seal; and a pressure tight isolation between said chamber and said vessel is maintained when said PPV is actuated to said closed position and said lid is removed.

7. (Previously Amended) The substrate processing chamber as in claim 5 further comprising: an outer perimeter seal; a vessel perimeter sealing surface; a lid; a lid perimeter sealing surface; said outer perimeter seal is dispersed within said slide; said outer perimeter seal forms a pressure tight communication with said vessel perimeter sealing surface when said PPV is actuated to said closed position; and said perimeter seal forms a pressure tight communication with said lid perimeter sealing surface when said PPV is actuated to said closed position[.] [W]wherein said

lid is removable providing access to said chamber and said perimeter seal; and a pressure tight isolation between said chamber and said vessel is maintained when said PPV is actuated to said closed position and said lid is removed.

8. (Currently Amended) The substrate processing chamber as in claim 1 further comprising: a substrate placement member; wherein said substrate placement member is actuated to provide vertical substrate translation; and said actuator is substantially contained within said process chamber.

9. (Currently Amended) The substrate processing chamber as in claim [10] 8 wherein said actuator comprising pneumatic actuation.

10. (Currently Amended) The substrate processing chamber as in claim 2 further comprising: a substrate placement member; wherein said substrate placement member is actuated to provide vertical substrate translation; and said actuator is substantially contained within said process chamber.

11. (Currently Amended) The substrate processing chamber as in claim 5 further comprising: a substrate placement member; wherein said substrate placement member is actuated to provide vertical substrate translation; and said actuator is substantially contained within said process chamber.

12. (Original) The substrate processing chamber as in claim 7 further comprising: a substrate placement member including a vertical substrate placement actuator for providing vertical substrate translation; said processing chamber characterized by said actuator being substantially contained within said processing space.

13. (Original) The substrate processing chamber as in claim 12 wherein said actuator comprises a pneumatic actuator and wherein pressurizing said pneumatic actuator translates said substrate vertically up; and evacuating said pneumatic actuator translates said substrate vertically down.

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Currently Amended) A substrate processing system comprising: a substrate processing system vessel; a substrate processing chamber; and said processing system vessel comprising: a pressure tight vessel space; a top vessel plate, a bottom vessel plate; a top port; a bottom port; and said substrate processing chamber comprising: a perimeter partitioned assembly; a lid assembly; and said PPA comprising: a substrate supporting member; a perimeter partition valve (PPV); an essentially continuous perimeter sealing slide; a perimeter PPV bonnet; a substrate placement member; a pumping port; and an accessory port; said lid assembly comprising: a gas

delivery manifold; wherein said bottom port is formed within said bottom vessel plate of said processing system vessel and said top port is formed within said top vessel plate of said processing system vessel; wherein said perimeter PPV bonnet is pressure sealed to said bottom port of said processing system vessel and said lid assembly is pressure sealed to said top port of said processing system vessel to form said substrate processing chamber, wherein said perimeter partition valve comprises a continuous perimeter seal within said slide; a continuous perimeter sealing surface; and an actuator for moving said sealing slide between an open position and a closed position.

18. (Currently Amended) The substrate processing system as in claim 17 wherein said substrate placement member is actuated to provide vertical substrate translation; and said [actuated] actuation is substantially contained within said process chamber.

19. (Original) The substrate processing system as in claim 17 wherein said processing system vessel further comprising a substrate translating member.

20. (Original) The substrate processing system as in claim 19 further comprising: a load-lock chamber .

21. (Original) The substrate processing system as in claim 20 wherein said load-lock chamber comprising: a bottom load-lock assembly; and a top load-lock assembly; wherein said bottom load-lock assembly is pressure sealed to said bottom port of said processing system vessel and

said top load-lock assembly is pressure sealed to said top port of said processing system vessel to form said load-lock chamber.

22. (Currently Amended) The substrate processing system as in claim 19 wherein said substrate placement member is actuated to provide vertical substrate translation; and said [actuated] actuation is substantially contained within said process chamber.

23. (Currently Amended) The substrate processing system as in claim 20 wherein said substrate placement member is actuated to provide vertical substrate translation; and said [actuated] actuation is substantially contained within said process chamber.

24. (Currently Amended) The substrate processing system as in claim 21 wherein said substrate placement member is actuated to provide vertical substrate translation; and said [actuated] actuation is substantially contained within said process chamber.

25. (Original) The substrate processing system as in 22 wherein said processing is ALD.

26. (Original) The substrate processing system as in 23 wherein said processing is ALD.

27. (Original) The substrate processing system as in 24 wherein said processing is ALD.

28. (Original) The substrate processing system as in claim 19 wherein said substrate translating member comprising a substrate handling robot .

29. (Original) The substrate processing system as in claim 20 wherein said substrate translating member comprising a substrate handling robot .

30. (Original) The substrate processing system as in claim 21 wherein said substrate translating member comprising a substrate handling robot .

31. (Original) The substrate processing system as in claim 22 wherein said substrate translating member comprising a substrate handling robot .

32. (Original) The substrate processing system as in claim 23 wherein said substrate translating member comprising a substrate handling robot .

33. (Original) The substrate processing system as in claim 24 wherein said substrate translating member comprising a substrate handling robot .

34. (Currently Amended) The substrate processing system as in claim 19 wherein: said processing system comprising a plurality of [said] processing chambers; said substrate translating member comprising a multiple lever rotation member; said multiple lever rotation member comprising: equally spaced number of substrate pickup levers; said number of levers

equals the number of said plurality of processing chambers; and said substrate translating comprising: sequentially rotating all of said substrates in one direction; and sequentially processing all of said substrates.

35. (Currently Amended) The substrate processing system as in claim 20 wherein: said processing system comprising a plurality of [said] processing chambers and a plurality of [said] load-lock chambers; said substrate translating member comprising a multiple lever rotation member; said multiple lever rotation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers and said plurality of load-lock chambers; and said substrate translating comprising: sequentially rotating all of said substrates in one direction; sequentially processing all of said substrates within said processing chambers; and handling said substrates within said load-lock chambers.

36. (Currently Amended) The substrate processing system as in claim 21 wherein: said processing system comprising a plurality of [said] processing chambers and a plurality of [said] load-lock chambers; said substrate translating member comprising a multiple lever rotation member; said multiple lever rotation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers and said plurality of load-lock chambers; and, said substrate translating comprising: sequentially rotating all of said substrates in one direction; sequentially processing all of said

substrates within said processing chambers; and handling said substrates within said load-lock chambers.

37. (Currently Amended) The substrate processing system as in claim 22 wherein: said processing system comprising a plurality of [said] processing chambers; said substrate translating member comprising a multiple lever rotation member; said multiple lever rotation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the number of said plurality of processing chambers; and said substrate translating comprising: sequentially rotating all of said substrates in one direction; and sequentially processing all of said substrates.

38. (Currently Amended) The substrate processing system as in claim 23 wherein: said processing system comprising a plurality of [said] processing chambers and a plurality of [said] load-lock chambers; said substrate translating member comprising a multiple lever rotation member; said multiple lever rotation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers and said plurality of load-lock chambers; and said substrate translating comprising: sequentially rotating all of said substrates in one direction; sequentially processing all of said substrates within said processing chambers; and handling said substrates within said load-lock chambers.

39. (Currently Amended) The substrate processing system as in claim 24 wherein: said processing system comprising a plurality of [said] processing chambers and a plurality of [said] load-lock chambers; said substrate translating member comprising a multiple lever rotation member; said multiple lever rotation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers and said plurality of load-lock chambers; and said substrate translating comprising: sequentially rotating all of said substrates in one direction; sequentially processing all of said substrates within said processing chambers; and handling said substrates within said load-lock chambers.

40. (Currently Amended) The substrate processing system as in claim 19 wherein: said processing system comprising a plurality of [said] processing chambers; said plurality of processing chambers is substantially arranged on a single line; said substrate translating member comprising a multiple lever linear translation member; said multiple lever linear translation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the number of said plurality of processing chambers; and said substrate translating comprising: sequentially translating all of said substrates in one direction; and sequentially processing all of said substrates.

41. (Currently Amended) The substrate processing system as in claim 20 wherein: said processing system comprising a plurality of [said] processing chambers and two of said load-lock chambers; said plurality of processing chambers is substantially arranged on a single line;

said load-lock chambers are arranged to be first and last within said line; said substrate translating member comprising a multiple lever linear translation member; said multiple lever linear translation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers plus two; and said substrate translating comprising: sequentially translating all of said substrates in one direction from said first to said last; and sequentially processing all of said substrates within said processing chambers; placing a substrate in said first load-lock chamber; and removing a substrate from said last load-lock chamber.

42. (Currently Amended) The substrate processing system as in claim 21 wherein: said processing system comprising a plurality of [said] processing chambers and two of said load-lock chambers; said plurality of processing chambers is substantially arranged on a single line; said load-lock chambers are arranged to be first and last within said line; said substrate translating member comprising a multiple lever linear translation member; said multiple lever linear translation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers plus two; and said substrate translating comprising: sequentially translating all of said substrates in one direction from said first to said last; and sequentially processing all of said substrates within said processing chambers; placing a substrate in said first load-lock chamber; and removing a substrate from said last load-lock chamber.

43. (Currently Amended) The substrate processing system as in claim 22 wherein: said processing system comprising a plurality of [said] processing chambers; said plurality of processing chambers is substantially arranged on a single line; said substrate translating member comprising a multiple lever linear translation member; said multiple lever linear translation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the number of said plurality of processing chambers; and said substrate translating comprising: sequentially translating all of said substrates in one direction; and sequentially processing all of said substrates.

44. (Currently Amended) The substrate processing system as in claim 23 wherein: said processing system comprising a plurality of [said] processing chambers and two of said load-lock chambers; said plurality of processing chambers is substantially arranged on a single line; said load-lock chambers are arranged to be first and last within said line; said substrate translating member comprising a multiple lever linear translation member; said multiple lever linear translation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers plus two; and said substrate translating comprising: sequentially translating all of said substrates in one direction from said first to said last; and sequentially processing all of said substrates within said processing chambers; placing a substrate in said first load-lock chamber; and removing a substrate from said last load-lock chamber.

45. (Currently Amended) The substrate processing system as in claim 24 wherein: said processing system comprising a plurality of [said] processing chambers and two of said load-lock chambers; said plurality of processing chambers is substantially arranged on a single line;. said load-lock chambers are arranged to be first and last within said line; said substrate translating member comprising a multiple lever linear translation member; said multiple lever linear translation member comprising: equally spaced number of substrate pickup levers; said number of levers equals the sum of the number of said plurality of processing chambers plus two; and said substrate translating comprising: sequentially translating all of said substrates in one direction from said first to said last; and sequentially processing all of said substrates within said processing chambers; placing a substrate in said first load-lock chamber; and removing a substrate from said last load-lock chamber.

46. (Previously Amended) The substrate processing system as in claim 28 wherein said system is attached to a wafer handling chamber; and said attached wafer handling chamber comprising: a slit formed in the wall of said pressure tight vessel space; and a slit valve forming a pressure tight communication with said processing system and said wafer handling system[;].

47. (Previously Amended) The substrate processing system as in claim 31 wherein said system is attached to a wafer handling chamber; and said attached wafer handling chamber comprising: a slit formed in the wall of said pressure tight vessel space; and a slit valve forming a pressure tight communication with said processing system and said wafer handling system[;].

48. (Previously Amended) The substrate processing system as in claim 34 wherein said system is attached to a wafer handling chamber; and said attached wafer handling chamber comprising: a slit formed in the wall of said pressure tight vessel space; and a slit valve forming a pressure tight communication with said processing system and said wafer handling system[;].

49. (Previously Amended) The substrate processing system as in claim 37 wherein said system is attached to a wafer handling chamber; and said attached wafer handling chamber comprising: a slit formed in the wall of said pressure tight vessel space; and a slit valve forming a pressure tight communication with said processing system and said wafer handling system[;].

50. (Previously Amended) The substrate processing system as in claim 40 wherein said system is attached to a wafer handling chamber; and said attached wafer handling chamber comprising: a slit formed in the wall of said pressure tight vessel space; and a slit valve forming a pressure tight communication with said processing system and said wafer handling system[;].

51. (Previously Amended) The substrate processing system as in claim 43 wherein said system is attached to a wafer handling chamber; and said attached wafer handling chamber comprising: a slit formed in the wall of said pressure tight vessel space; and a slit valve forming a pressure tight communication with said processing system and said wafer handling system[;].

52. (Original) The substrate processing system as in claim 51 wherein said multiple lever linear translation member comprising: a first set of levers; a second set of levers; said first set of levers

and said second set of levers are spaced to substantially match the center to center distance between said process chambers; said levers are translatable forward and backward in the direction of said single line; wherein sequentially translating all of said substrates comprising: removing a completed substrate from a last processing chamber elevating said substrates using said substrate placement member; moving first set of levers backwards to substantially locate under said substrates; moving second set of lever forwards substantially locate under said substrates; lowering said substrates using said substrate placement member; translating said substrates forwards to the next said processing chamber by moving said first set of levers and said second set of levers concurrently; Moving said first set of lever forward and moving said second set of levers backwards to substantially locate between said processing chambers; and Loading a substrate into a first processing chamber.

53. (Original) The substrate processing system as in claim 44 wherein said multiple lever linear translation member comprising: a first set of levers; a second set of levers; said first set of levers and said second set of levers are spaced to substantially match the center to center distance between said process chambers; said levers are translatable forward and backward in the direction of said single line; wherein sequentially translating all of said substrates comprising: removing a completed substrate from said last load-lock chamber elevating said substrates using said substrate placement member; moving first set of levers backwards to substantially locate under said substrates; moving second set of lever forwards substantially locate under said substrates; lowering said substrates using said substrate placement member; translating said substrates forwards to the next said processing chamber by moving said first set of levers and

said second set of levers concurrently; Moving said first set of lever forward and moving said second set of levers backwards to substantially locate between said processing chambers; and Loading a substrate into said first load-lock chamber.

54. (Cancelled)

Drawings

IN THE DRAWINGS:

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: **REMOVAL OF ALL WIPO AND PCT HEADERS**. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

Allowable Subject Matter

3. Claims 1-13, 17-53 are allowed.

4. The following is a statement of reasons for the indication of allowable subject matter: Applicant's claimed perimeter partition valve (PPV) at Figure 2b, 4b, and associated structure, is a structure that is absent from the prior art for at least the reason that the prior art does not provide such a structure around the perimeter of a reactor. Customarily, the prior art only renders a fraction of a reactor's perimeter as a dedicated location for access/egress to/from the interior of the chamber as in common "gate valve" arrangements. See the Examiner's cited prior art for examples. The closest prior art to WO03062490 and WO2005003406 are disqualified as prior art under possible 103(a) rejections with Applicant's accompanying 103(c) statement.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 20090209095 A1

US 20090176355 A1

US 20090156015 A1

US 20070269983 A1

US 20070186857 A1

US 20070051312 A1

US 20060150904 A1

US 20050217578 A1

US 20050193948 A1

US 20050160983 A1

US 20050051100 A1

US 20040149214 A1

US 20040083978 A1

US 20020144786 A1

US 20020144657 A1

US 20010042514 A1

US 7585383 B2

US 7422636 B2

US 7416633 B2

US 7335277 B2

US 7276124 B2

US 7247207 B2

US 7214274 B2

US 7147719 B2

US 7138336 B2

US 7018504 B1

US 7008879 B2

US 6902623 B2

US 6846380 B2

US 6827789 B2

US 6663714 B2

US 6517048 B2

US 6409837 B1

US 6394733 B1

US 6390449 B1

US 6308932 B1

US 6183564 B1

US 6111225 A

US 5997588 A

US 5788799 A

US 4439261 A

JP 04193946 A

WO 03062490 A2

WO 2005003406 A2

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Friday schedule from 9am through 5pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272- 1435

/Rudy Zervigon/

Primary Examiner, Art Unit 1792